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ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/8 4/2
19702D GSRS, MISSILE NUMBER 363, ROUND NUMBER B-15.(U)
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of 19702D GSRS, Missile No. 363, Round No. B-15, are presented in tabular form.		

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INTRODUCTION

19702D GSRS, Missile Number 363, Round Number B-15, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1543 MDT, 16 May 1979. The scheduled launch time was 1540 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from RPTS T-9 pibal observation at:

SITE AND ALTITUDE

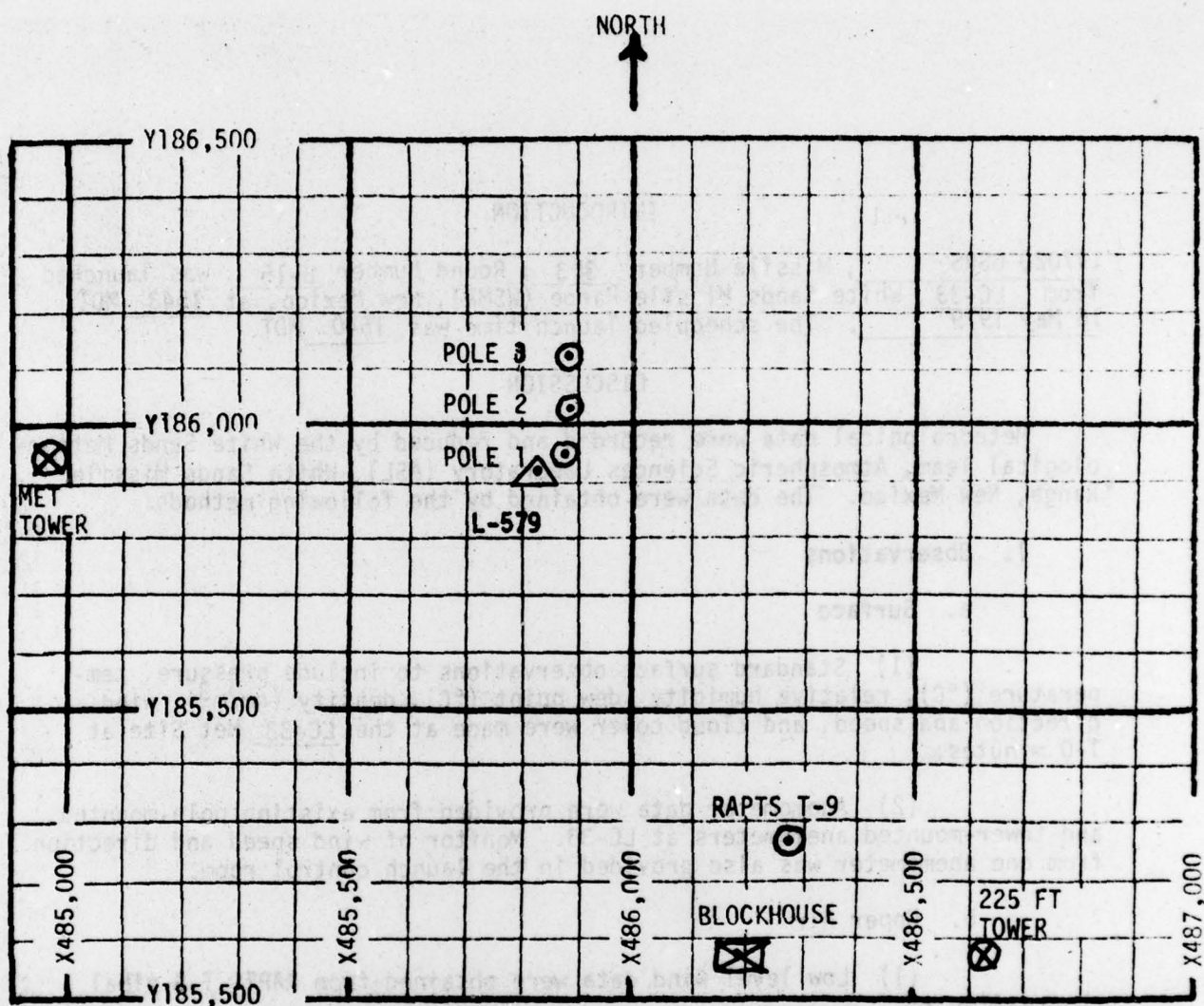
LC-33 1080 meters (30-meter increments) 1534 MDT

LC-33 1080 meters (30-meter increments) 1545 MDT

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to 27,500 feet in 500-foot increments.

SITE AND TIME

SMR 1440 MST



1. MET TOWER - 4 Bendix Model T-120 Anemometers at 12 ft, 62 ft, 102 ft and 202 ft with E/A recorders.
2. POLE ANEMOMETER - Bendix Model T-120 with E/A recorders.
 - (a) Pole #1 - 38.7 ft
 - (b) Pole #2 - 53.0 ft
 - (c) Pole #3 - 83.6 ft
3. 225 FT WIND TOWER - 5 Bendix Model T-120 Anemometers at 35 ft, 88 ft, 128 ft, 168 ft and 200 ft with 5 X-Y visual indicators in Blockhouse.
4. RAPTS T-9 - Radar Automatic Pilot-Balloon Tracking System T-9 Radar

**TABLE 1. SURFACE OBSERVATIONS TAKEN AT 1546 MDT,
16 MAY 1979 AT LC-33, 19702D GSRS,
MISSILE NO. 363, ROUND NO. B-15**

ELEVATION	3977.30	FT/MSL
PRESSURE	876.6	MBS
TEMPERATURE	29.7	°C
RELATIVE HUMIDITY	22	%
DEW POINT	5.6	°C
DENSITY	1003	GM/M ³
WIND SPEED	08	MPH
WIND DIRECTION	220	DEGREES
CLOUD COVER	3	Cu
CLOUD COVER	4	C1

TABLE 2. LC-33 FIXED POLE ANEMOMETER-MEASURED WINDS

POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	150	11	-30	162	09	-30	160	09
-20	142	09	-20	167	09	-20	150	06
-10	146	09	-10	168	09	-10	160	07
0.0	156	10	0.0	155	10	0.0	157	06
+10	143	08	+10	162	10	+10	168	09

Type 19702D GSRS, Missile No. 363, Round No. B-15 launched
from LC-33 on 16 May 1979 at 1543 MDT.

POLE #1 = X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL

POLE #2 = X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL

POLE #3 = X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL

NOTE: Wind directions are referenced to the firing azimuth _____
or true north true north.

TABLE 3. LC-33 METEOROLOGICAL TOWER ANEMOMETER-MEASURED WINDS (202 FT. TOWER)

LEVEL #1 12 ft.			LEVEL #2 62 ft.		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	142	12	-30	149	15
-20	145	13	-20	140	15
-10	148	12	-10	136	14
0.0	144	09	0.0	135	11
+10	166	11	+10	156	15
LEVEL #3 102 ft.			LEVEL #4 202 ft.		
T-TIME SEC	DIR DEG	SPEED MPH	T-TIME SEC	DIR DEG	SPEED MPH
-30	147	14	-30	140	14
-20	140	16	-20	153	14
-10	141	14	-10	147	12
0.0	145	11	0.0	141	12
+10	153	15	+10	156	14

WTSM Coordinates: X484,982.64 Y185,957.73 H3983.00 (base)

Type 19702D GSRS, Missile No. 363, Round No. B-15 launched
from LC-33 on 16 May 1979 at 1543 MDT.

NOTE: Wind directions are referenced to the firing azimuth _____
or true north true north.

TABLE 4. PILOT-BALLOON-MEASURED WIND DATA (30-METER INCREMENTS)

HEIGHT METERS AGL	DIRECTION DEGREES	SPEED MPH
SFC	200	10.0
30	240	08.0
60	280	06.0
90	320	04.0
120	360	01.5
150	045	02.0
180	090	02.5
210	135	03.0
240	180	03.5
270	176	05.5
300	172	07.5
330	168	09.5
360	163	11.0

HEIGHT METERS AGL	DIRECTION DEGREES	SPEED MPH
390	170	12.0
420	176	12.5
450	182	13.5
480	188	14.0
510	185	15.0
540	182	16.0
570	179	17.0
600	175	18.0
630	175	18.0
660	174	18.0
690	173	18.0
720	172	18.0
750	174	18.5

Release Point Coordinates (WSTM): X486,037.24 Y486,037.24 H3977.30

Released from LC-33 on 16 May 1979 at 1534 MDT.Type 19702D GSRS, Missile No. 363, Round No. B-15 launched
from LC-33 on 16 May 1979 at 1543 MDT.NOTE: Wind directions are referenced to the firing azimuth _____
or true north true north.

HEIGHT METERS AGL	DIRECTION DEGREES	SPEED MPH
780	176	19.0
810	178	19.5
840	180	19.5
870	177	18.5
900	174	17.0
930	171	15.5
960	167	14.0
990	127	14.0
1020	086	14.0
1050	046	14.0
1080	005	14.0
1110		
1140		
1170		
1200		
1230		
1260		
1290		
1320		
1350		
1380		
1410		

HEIGHT METERS AGL	DIRECTION DEGREES	SPEED MPH
1440		
1470		
1500		
1530		
1560		
1590		
1620		
1650		
1680		
1710		
1740		
1770		
1800		
1830		
1860		
1890		
1920		
1950		
1980		
2010		
2040		
2070		

TABLE 5. PILOT-BALLOON-MEASURED WIND DATA (30-METER INCREMENTS)

HEIGHT METERS AGL	DIRECTION DEGREES	SPEED MPH
SFC	220	8.0
30	212	6.5
60	203	4.5
90	195	3.0
120	186	1.0
150	185	1.5
180	184	2.0
210	183	2.5
240	182	2.5
270	182	3.5
300	182	4.0
330	182	5.0
360	181	5.5

HEIGHT METERS AGL	DIRECTION DEGREES	SPEED MPH
390	180	6.0
420	178	6.5
450	177	7.0
480	175	7.5
510	178	8.5
540	180	9.0
570	182	10.0
600	184	10.5
630	185	11.5
660	186	12.5
690	187	13.5
720	187	14.5
750	191	15.5

Release Point Coordinates (WSTM): X486,037.24 Y486,037.24 H3977.30
 Released from LC-33 on 16 May 1979 at 1545 MDT.

Type 19702D GSRS, Missile No. 363, Round No. B-15 launched
 from LC-33 on 16 May 1979 at 1543 MDT.

NOTE: Wind directions are referenced to the firing azimuth _____
 or true north true north.

HEIGHT METERS AGL	DIRECTION DEGREES	SPEED MPH
780	195	16.5
810	199	17.5
840	202	18.0
870	202	18.0
900	202	17.5
930	202	17.5
960	201	17.0
990	200	18.0
1020	198	19.0
1050	196	20.0
1080	194	20.5
1110		
1140		
1170		
1200		
1230		
1260		
1290		
1320		
1350		
1380		
1410		

HEIGHT METERS AGL	DIRECTION DEGREES	SPEED MPH
1440		
1470		
1500		
1530		
1560		
1590		
1620		
1650		
1680		
1710		
1740		
1770		
1800		
1830		
1860		
1890		
1920		
1950		
1980		
2010		
2040		
2070		

STATION ALTITUDE 3997.30 FEET MSL
16 MAY 79 1440 HRS MST
ASCENSION NO. 119

SIGNIFICANT LEVEL DATA
1360060119
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE AIR	DEWPOINT DEGREES	REL. HUM. PERCENT
MILLIBARS	MSL FEET	DEGREES	CENTIGRADE	
874.9	3997.3	30.0	6.0	22.0
850.0	4836.0	25.6	1.0	20.0
819.0	5899.8	21.7	.3	24.0
762.2	7924.8	15.9	.5	35.0
700.0	10272.3	9.1	-.2	52.0
657.7	11955.1	3.6	-1.2	70.0
649.0	12311.2	4.0	-5.5	50.0
644.8	12484.8	3.8	-5.9	49.0
627.8	13196.3	2.0	-7.8	48.0
602.2	14294.8	-1.3	-8.3	59.0
585.0	15051.8	-3.4	-9.6	62.0
576.8	15418.5	-4.2	-13.3	49.0
560.4	16164.6	-5.6	-15.1	47.0
536.4	17287.1	-8.6	-23.0	30.0
524.6	17853.6	-9.1	-31.6	14.0
500.0	19068.7	-12.0	-32.0	17.0
467.6	20744.2	-15.2	-36.6	14.0
424.4	23127.2	-20.9	-41.3	14.0
417.4	23530.8	-21.8	-38.6	20.0
410.6	23928.2	-22.5	-28.6	57.0
400.0	24558.6	-23.8	-32.1	46.0
389.8	25177.8	-25.2	-44.2	15.0
350.6	27684.0	-30.5	-50.5	12.0

STATION ALTITUDE 3997.30 FEET MSL
16 MAY 79 1440 HRS MST
ASCENSION NO. 119

UPPER AIR DATA
1360060119
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (TN) DEGREES	SPEED KNOTS	INDEX OF REFRACTION
3997.3	874.9	30.0	6.0	22.0	1001.3	679.7	170.0	2.9	1.000262
4000.0	874.8	30.0	6.0	22.0	1001.3	679.7	170.0	2.9	1.000262
4500.0	859.9	27.4	3.0	20.8	993.5	676.5	165.1	5.4	1.000253
5000.0	845.1	25.0	.9	20.6	984.6	673.7	163.3	7.8	1.000247
5500.0	830.5	23.2	.6	22.5	973.6	671.6	162.4	10.3	1.000244
6000.0	816.1	21.4	.3	24.5	962.4	669.6	161.6	12.7	1.000242
6500.0	801.7	20.0	.6	27.3	949.9	668.0	162.0	14.8	1.000240
7000.0	787.6	18.5	.7	30.0	937.8	666.4	164.7	15.6	1.000237
7500.0	773.8	17.1	.6	32.7	925.8	664.8	167.5	15.2	1.000235
8000.0	760.1	15.7	.5	35.5	913.9	663.1	171.0	13.8	1.000232
8500.0	746.5	14.2	.5	39.2	901.9	661.5	173.1	13.0	1.000230
9000.0	733.1	12.8	.5	42.8	890.2	659.8	175.1	12.4	1.000228
9500.0	719.9	11.3	.3	46.4	878.6	658.2	179.9	12.3	1.000225
10000.0	706.9	9.9	-.0	50.0	867.3	656.5	185.3	12.1	1.000222
10500.0	694.1	8.4	-.3	54.4	856.1	654.7	193.0	11.7	1.000219
11000.0	681.4	6.8	-.4	59.8	845.1	652.9	200.7	11.8	1.000217
11500.0	668.9	5.2	-.8	65.1	834.3	651.1	206.9	12.9	1.000214
12000.0	656.6	3.8	-1.6	67.5	823.3	649.4	206.8	15.7	1.000210
12500.0	644.4	3.8	-6.0	49.0	808.9	649.0	204.9	19.0	1.000200
13000.0	632.4	2.5	-7.3	48.3	797.6	647.5	203.8	21.0	1.000195
13500.0	620.6	1.1	-7.9	51.0	786.8	645.8	203.1	22.4	1.000192
14000.0	609.0	-.4	-8.1	56.0	776.2	644.0	202.8	22.6	1.000190
14500.0	597.5	-1.9	-8.6	59.8	765.7	642.3	202.5	22.7	1.000187
15000.0	586.2	-3.3	-9.5	61.8	755.1	640.6	202.2	22.2	1.000184
15500.0	575.0	-4.4	-13.5	48.8	744.1	639.2	201.8	21.6	1.000177
16000.0	564.0	-5.3	-14.7	47.4	732.5	638.0	201.9	20.0	1.000174
16500.0	553.1	-6.5	-17.3	41.9	721.8	636.5	202.1	18.4	1.000169
17000.0	542.4	-7.8	-20.8	34.3	711.7	634.8	199.7	18.1	1.000165
17500.0	531.6	-9.4	-25.6	24.0	700.6	633.6	197.7	18.3	1.000160
18000.0	521.9	-10.6	-31.6	14.4	688.8	632.7	198.3	19.4	1.000156
18500.0	511.4	-11.8	-31.8	15.6	678.4	631.3	200.1	19.5	1.000153
19000.0	501.4	-12.8	-32.0	16.8	668.2	629.9	203.2	18.7	1.000151
19500.0	491.5	-13.8	-33.2	16.2	657.5	628.7	205.9	17.1	1.000149
20000.0	481.7	-14.7	-34.5	15.3	646.8	627.5	208.9	15.2	1.000146
20500.0	472.2	-15.8	-35.9	14.4	636.4	626.3	210.7	13.9	1.000143
21000.0	462.8	-17.0	-37.1	14.0	626.3	625.0	212.5	12.8	1.000141
21500.0	453.4	-18.2	-38.1	14.0	616.6	623.6	215.4	13.8	1.000139
22000.0	444.3	-19.4	-39.0	14.0	607.0	622.1	217.9	15.2	1.000136
22500.0	435.4	-20.6	-40.0	14.0	597.6	620.6	222.9	17.2	1.000134
23000.0	426.6	-20.6	-41.0	14.0	588.4	619.2	227.5	19.4	1.000132

STATION ALTITUDE 3997.30 FEET MSL
16 MAY 79 1440 HRS MST
ASCENSION NO. 119

UPPER AIR DATA
1360060119
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	417.9	-21.7	19.5	579.0	617.8	231.4	20.9	1.000130
24000.0	409.4	-22.6	55.7	569.0	616.8	234.8	22.2	1.000130
24500.0	401.0	-23.7	47.0	559.7	615.4	236.3	23.2	1.000127
25000.0	392.7	-24.8	23.9	550.7	614.0	236.2	24.0	1.000124
25500.0	384.5	-25.9	14.6	541.7	612.6	236.2	24.6	1.000121
26000.0	376.5	-26.9	14.0	532.6	611.3	236.3	24.9	1.000119
26500.0	368.6	-28.0	13.4	523.7	610.0	236.3	25.2	1.000117
27000.0	360.9	-29.1	12.8	515.0	608.7			1.000115
27500.0	353.3	-30.1	12.2	506.4	607.4			1.000113

STATION ALTITUDE 3997.30 FEET MSL
16 MAY 79 1440 HRS MST
ASCENSION NO. 119

MANDATORY LEVELS
1360060119
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4833.	25.6	1.0	20.	163.8	7.0
800.0	6560.	19.8	.6	28.	162.3	14.9
750.0	8367.	14.6	.5	38.	172.7	13.2
700.0	10262.	9.1	-.2	52.	189.3	11.8
650.0	12257.	4.0	-4.9	52.	205.7	17.6
600.0	14374.	-1.6	-8.4	59.	202.6	22.7
550.0	16625.	-6.9	-18.3	40.	201.6	18.3
500.0	19042.	-12.0	-32.0	17.	203.5	18.6
450.0	21661.	-17.5	-38.4	14.	216.4	14.3
400.0	24518.	-23.8	-32.1	46.	236.2	23.3

STATION ALTITUDE 3997.30 FEET MSL		MRN MANDATORY LEVELS		GEODETIC COORDINATES	
16 MAY 79		1360060119		32.48034 LAT DEG	
ASCENSION NO. 119		S M R		106.42307 LON DEG	
1440 HRS MST					

GEOPOTENTIAL ALTITUDE DECAMETERS	DIRECTION DEG (TN)	WIND DATA		DEW PT DEG C	TEMPERATURE		PRESSURE MILLIBARS
		SPEED MPS	N-S MPS		AIR DEG C		
747.	236.	12.	7.	08	-23.8	4.000+2	
660.	216.	7.	6.	21	-17.5	4.500+2	
580.	204.	10.	9.	20	-12.0	5.000+2	
507.	202.	9.	9.	11	-6.9	5.500+2	
438.	203.	12.	11.	07	-1.6	6.000+2	
374.	206.	9.	8.	09	4.0	6.500+2	
313.	189.	6.	6.	09	9.1	7.000+2	
255.	173.	7.	7.	14	14.6	7.500+2	
200.	162.	8.	7.	19	19.8	8.000+2	
147.	164.	4.	3.	25	25.6	8.500+2	